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PHASE III SUBSURFACE INVESTIGATION

CROWN CITY PLATING COMPANY
4350 TEMPLE CITY BOULEVARD
EL MONTE, CALIFORNIA

Prepared For:


CALIFORNIA REGIONAL WATER QUALITY
CONTROL BOARD
LOS ANGELES REGION
(REGION 4)
(File No. 103.0096)

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Project No. 89-216

March 1, 1990


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Project Director



1.0 INTRODUCTION AND SUMMARY

1.1 INTRODUCTION

1. This Phase III Subsurface Investigation was developed for the Crown City Plating Company (Crown City) facility located at 4350 Temple City Boulevard in El Monte, California. Figure 1.1 shows the site location on a United States Geologic Survey Topographic Map. The purpose of the Phase III Subsurface Investigation was to better evaluate: (1) the ground water flow direction and gradient beneath the Crown City facility, and (2) the potential source of ground water contamination previously identified at the facility.
2. This Phase III Subsurface Investigation is a continuation of the Phase I and Phase II Subsurface Investigations previously performed at the Crown City facility by Emcon Associates. The Phase I work consisted of the installation of two shallow soil borings in the drum storage area at the south end of the site. The Phase II work consisted of the installation of four additional shallow soil borings and Monitoring Well E-1 in the drum storage area. Results of the Phase I and II work indicated the presence of low levels of chlorinated solvents to a depth of 10 feet in the soil and low levels of solvents in the ground water. The Phase II report concluded the ground water contamination was from offsite source(s). Pertinent details of the Phase I and Phase II investigations are presented in Section 2.4.2.
3. After review of the Phase II Investigation Report, the California Regional Water Quality Control Board (CRWQCB) issued a letter dated March 24, 1989, requiring Crown City to perform a Phase III Subsurface Investigation to better evaluate the ground water flow direction and the quality of the ground water flowing onto the property. Crown City subsequently contracted Environmental Solutions, Inc. to perform the Phase III Subsurface Investigation.
4. This Phase III Subsurface Investigation was performed pursuant to the Phase III Subsurface Investigation Workplan that was submitted to the CRWQCB on August 31, 1989. A copy of the Workplan is included as Appendix A. The CRWQCB reviewed the Workplan and issued a letter dated September 22, 1989, approving the investigation plan. A copy of the approval letter is included as Appendix B.

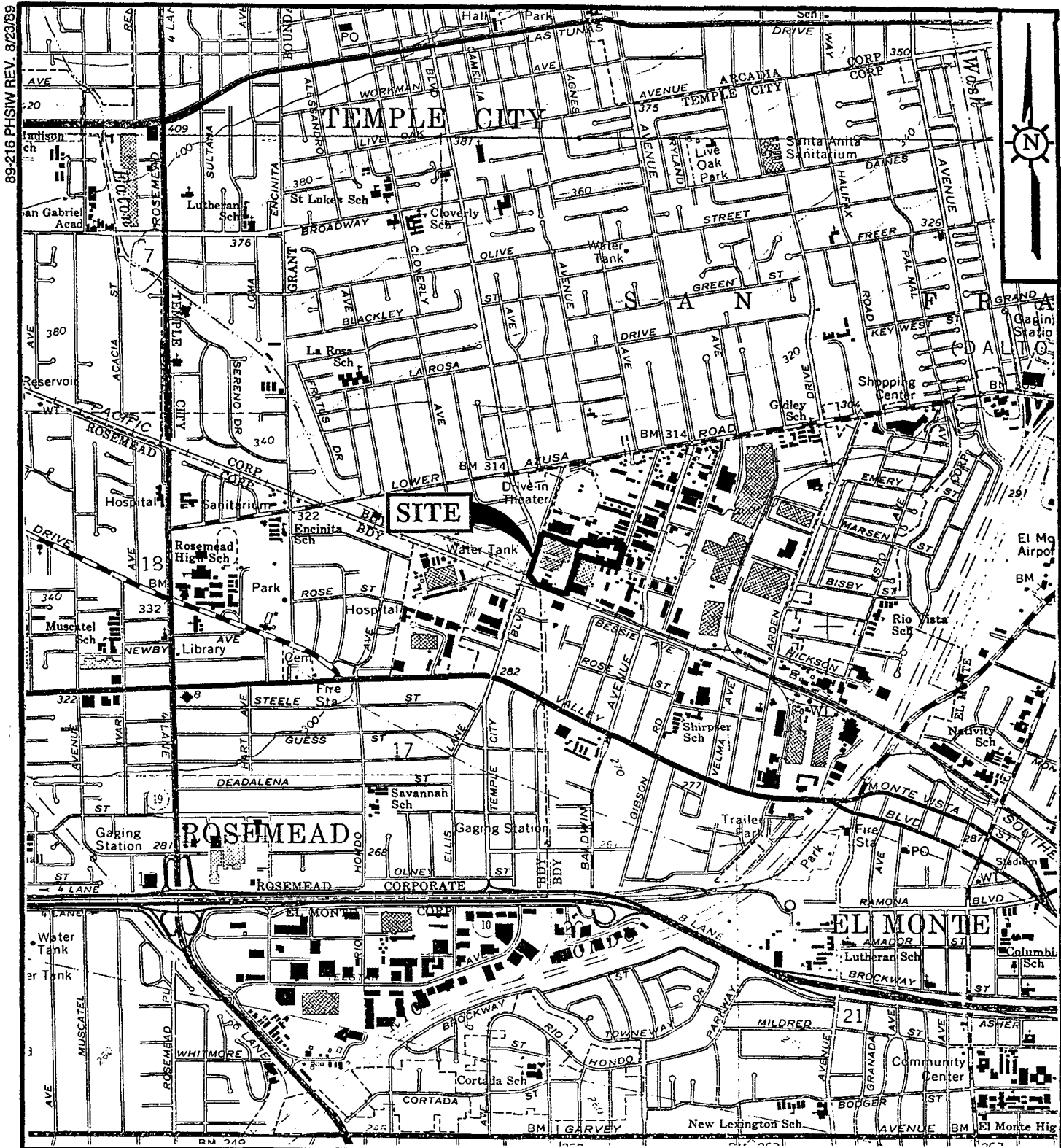


FIGURE 1.1

SITE LOCATION MAP
 CROWN CITY PLATING CO.
 4350 TEMPLE CITY BLVD.
 EL MONTE, CALIFORNIA

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5. The Phase III Field Investigation Scope of Work consisted of:

- A survey of the ground water elevations in the monitoring well(s) at Crown City and the surrounding facilities to determine the ground water flow direction in the site vicinity.
- Drilling and installation of two ground water monitoring wells in the upgradient ground water flow direction.
- Analysis of ground water samples collected from the two new monitoring wells and from the existing monitoring well and production well.
- After installation of the two new monitoring wells, ground water elevations were determined at the Crown City site and surrounding facilities to better evaluate ground water flow direction in the site vicinity.

Delays in negotiations with Southern Pacific Transportation Company (SPTCo) have resulted in postponement of the two soil borings (B-7 and B-8) that were to be drilled in the SPTCo right-of-way immediately south of the drum storage area.

6. A summary of the investigation findings is presented below. A more detailed description of the work is presented in the following chapters.

1.2 SUMMARY

1. Ground water elevations in the monitoring well(s) at Crown City and the surrounding facilities were surveyed in November, 1989. Results of the survey indicated:

- Ground water elevations in the two wells at the Brown Jordan facility, located immediately adjacent to the east side of the Crown City site, were approximately eight feet higher than that measured at the existing Crown City Well E-1, indicating potential for ground water flow toward the Crown City site from the east. Therefore, Monitoring Well E-2 was located along the eastern property boundary of the Crown City facility, immediately upgradient of Monitoring Well E-1.
- Ground water elevations in the remaining wells indicated an overall north to south flow trend (with the exception of the east to west flow suggested by the Brown Jordan wells). Therefore, Monitoring Well E-3 was placed along the north/northeast property boundary.

2. The analytical laboratory results of the soil and ground water analyses are summarized in Table 1.1. The following are significant points regarding the analytical results:

- Volatile organic hydrocarbons were not detected in the ground water sample collected from the production well.
- Chlorinated solvents were detected in each of the three monitoring wells. Aromatic hydrocarbons, such as toluene, were not detected in any of the ground water samples.

TABLE 1.1

**SUMMARY OF LABORATORY RESULTS
PHASE III SUBSURFACE INVESTIGATION**

SAMPLE IDENTIFICATION AND SAMPLE DATE	VOLATILE PRIORITY POLLUTANTS - μg/kg or μg/l (EPA 8010/8020 or 624)				
	PCE	1,1,1 TCA	1,1 DCE	TCE	TOLUENE
<u>WELL E-1</u>					
Ground Water:					
1/25/89	150	45	15	300	<5
8/4/89	140	44	20	310	<2
2/2/90	65	18	3	220	<2
<u>WELL E-2</u>					
Soil:					
10 feet	<5	<5	<5	<5	7
40 feet	<5	<5	<5	11	<5
75 feet	<5	<5	<5	<5	5
Ground Water:					
2/2/90	<20	<20	<20	2,000	<20
<u>WELL E-3</u>					
Soil:					
10 feet	<5	<5	<5	<5	<5
45 feet	<5	<5	<5	<5	<5
80 feet	<5	<5	<5	8	<5
Ground Water:					
2/2/90	1	<1	<1	9	<1
<u>PRODUCTION WELL</u>					
8/4/89	<1	<1	<1	<1	<1
2/2/90	<1	<1	<1	<1	<1

2/23/90 (89-216)

- The concentrations of tetrachloroethene (PCE), trichloroethene (TCE), 1,1,1 Trichloroethane (TCA) and 1,1 dichloroethene (1,1 DCE) in the ground water sample collected from Monitoring Well E-1 are significantly lower (approximately 50 percent) compared to the levels that were detected the last time the well was sampled in August, 1989.
 - The highest contaminant concentration (2,000 µg/l of TCE) was identified in the ground water sample collected from Monitoring Well E-2, located along the eastern property boundary of the Crown City facility.
 - Low levels of PCE and TCE were detected in the ground water sample collected from Monitoring Well E-3, located on the northern property boundary.
 - A low level (8µg/kg) of TCE was detected in the soil sample collected from the 80-foot depth in Monitoring Well E-3 (just above the ground water table). Contaminants were not detected in the 10-foot or 45-foot soil sample from Monitoring Well E-3.
 - A low level (11µg/kg) of TCE was detected in the 40-foot soil sample from Monitoring Well E-2. TCE was not detected in the 10-foot or 80-foot samples, although a low level of toluene (7 µg/kg and 5 µg/kg) was detected in the 10-foot and 80-foot samples, respectively.
3. Ground water elevations in the monitoring wells at Crown City and the surrounding facilities were surveyed again in February, 1990, after the two new wells (E-2 and E-3) were installed. Results of the survey indicated:
- Ground water elevations at the facility east of the Crown City site remain to be approximately eight feet higher than in the wells at Crown City, indicating the potential for an east to west ground water flow.
 - Ground water elevations in the remaining wells indicate an overall north to south trend for ground water flow.
4. Key conclusions from this investigation are as follows:
- The ground water contamination identified in Monitoring Well E-1 appears to be from offsite sources potentially located east of the Crown City facility based on the following:
 - Ground water elevations at the facility east of the Crown City site are more than eight feet higher than the ground water elevations in the monitoring wells at the Crown City site.
 - Contaminant levels in Monitoring Well E-2, located along the eastern property boundary of the Crown City facility, are an order of magnitude higher than those in Monitoring Well E-1.
 - Ground water originating from north of the property boundary is contaminated with chlorinated solvents (PCE and TCE) based on testing from Monitoring Well E-3.

- The low levels of contaminants detected in the 10-, 40-, and 75-foot depth in soil samples collected during the drilling of Monitoring Well E-2 may potentially be the result of percolation of surface runoff water containing low levels of these compounds through the drainage ditch that is located adjacent to Monitoring Well E-2. This conclusion is based on:
 - Crown City has utilized the area around Monitoring Well E-2 only for parking purposes and has not stored or used chemicals in the area.
 - The drainage ditch carries surface run-off from the industrialized area north of Crown City facility.
 - Cracks in the asphalt lining of the ditch could provide pathways for percolation of the water into the subsurface soil.
 - Contaminant levels in samples collected from Monitoring Well E-2 are an order of magnitude higher than those in Monitoring Well E-1 or in Monitoring Well E-3.
5. Recommended future activities are:
- Quarterly gauging and sampling of the three ground water monitoring wells, along with the production well, should be continued through the end of 1990 to monitor changes in ground water elevation, flow potential, and contaminant levels.

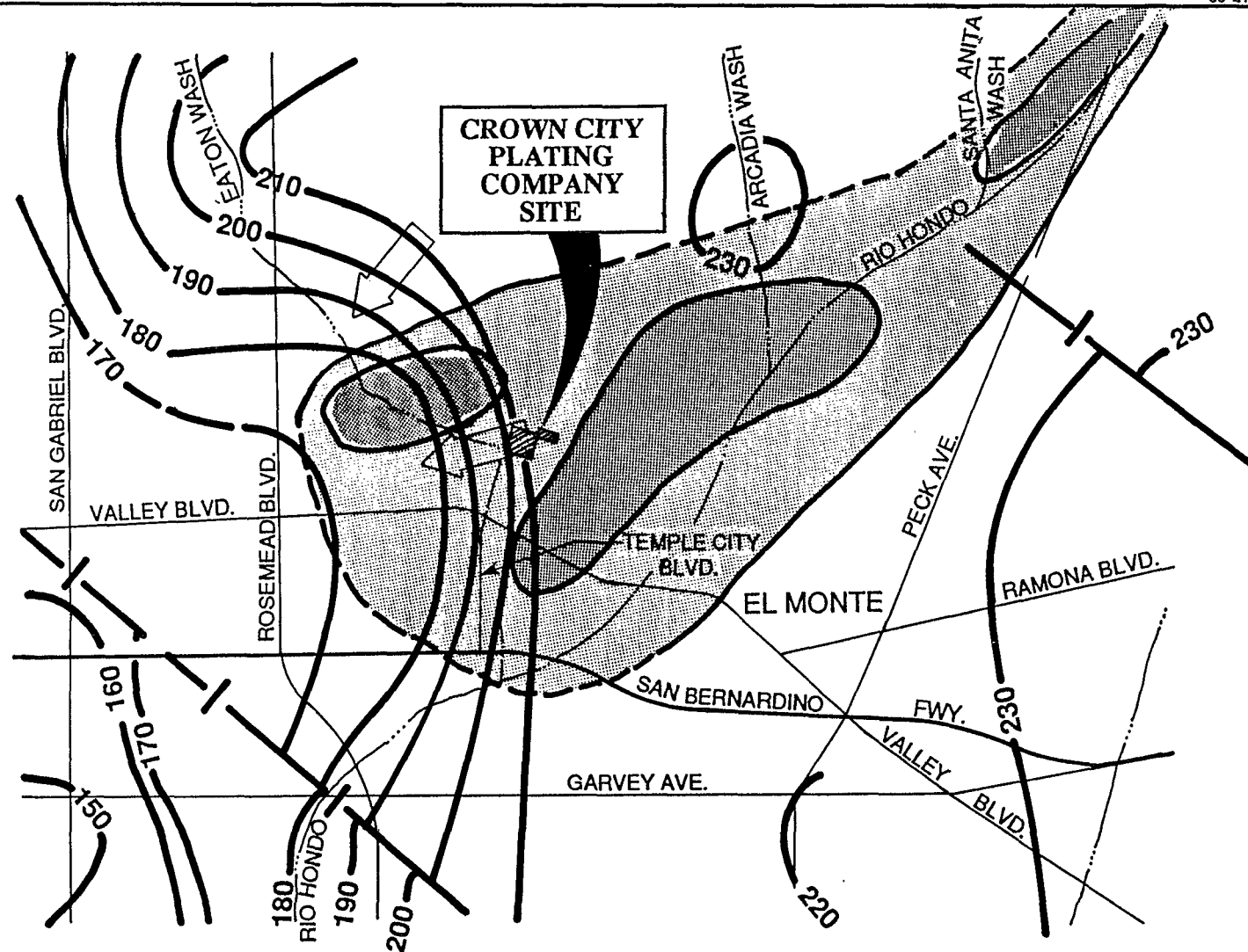
4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS




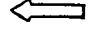

1. The ground water contamination detected in Monitoring Well E-1 appears to be from offsite sources. This conclusion is based on the following information:
 - Contaminant concentrations an order of magnitude higher in the upgradient Monitoring Well E-2 located along the eastern property boundary.
 - Ground water elevations are approximately eight feet higher in the monitoring wells located east of the site, indicating potential for flow toward the Crown City property from the east.
 - The presence of PCE and TCE in the ground water sample collected from Monitoring Well E-3, located at the northern property boundary.
2. The low levels of contaminants detected at the 10-, 40-, and 75-foot depth in soil samples collected during the drilling of Monitoring Well E-2 may be the result of percolation of surface runoff water containing low levels of these contaminants through the drainage ditch that is located adjacent to Monitoring Well E-2. Surface runoff from the industrial region north of the Crown City site drains into the ditch and is carried south to the Eaton Wash, which eventually empties into the Rio Hondo River. Because the culvert located near the south property boundary is slightly elevated above the bottom of the ditch, water tends to temporarily pond in the area of the ditch adjacent to Monitoring Well E-2. The asphalt lining within the ditch is cracked and broken and would provide a pathway for percolation of the ponded water.

4.2 RECOMMENDATIONS

1. Quarterly gauging and sampling of the three monitoring wells along with the production well should be continued until the end of 1990 to monitor changes in ground water elevation, flow potential and contaminant levels.
2. The quarterly monitoring program should be coordinated with the well gauging programs at the surrounding facilities such that changes in ground water flow characteristics in the site can be evaluated relative to changes in ground water flow in the site vicinity.



LEGEND

-  TCE POTENTIALLY RANGING FROM 5-50 ppb
-  TCE POTENTIALLY AT DETECTION LEVEL TO 5ppb.
-  FALL, 1986 GROUND WATER ELEVATIONS FEET ABOVE MEAN SEA LEVEL
-  GROUND WATER FLOW DIRECTION
-  GEOLOGIC BARRIER TO GROUND WATER MOVEMENT

0 4,000 8,000 FEET

SCALE

REFERENCE: LOS ANGELES COUNTY FLOOD
CONTROL DISTRICT, GROUND WATER
ELEVATION CONTOUR MAP, FALL, 1986.

NOTE: 1. TCE CONCENTRATIONS REPORTED BY
THE EPA, APRIL, 1986

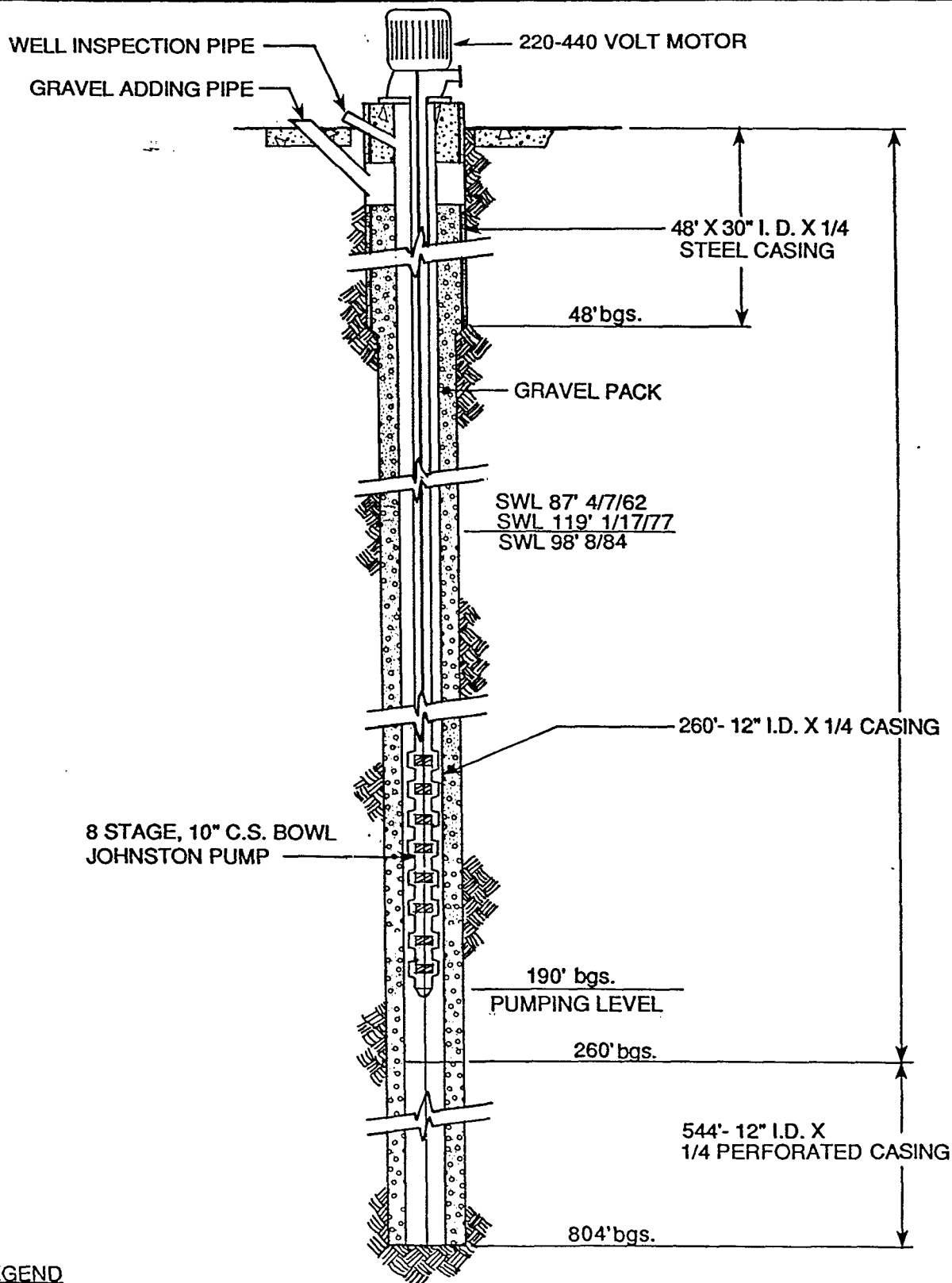
2. GROUND ELEVATIONS AT THE SITE ARE
APPROXIMATELY 300 TO 305 FEET ABOVE
MEAN SEA LEVEL BASED ON USGS 7.5 MIN
TOPOGRAPHIC MAP.

FIGURE 2.2
**TCE CONTAMINATION
IN GROUND WATER
EL MONTE AREA**
CROWN CITY PLATING CO.
4350 TEMPLE CITY BLVD.
EL MONTE, CALIFORNIA

ENVIRONMENTAL SOLUTIONS, INC.

REVISED 8/14/89

89-216 PHSW/REV. 8/23/89

**LEGEND**

SWL STATIC WATER LEVEL
bgs. BELOW GROUND SURFACE

REFERENCE: WATER WELL DIAGRAM WITH CONTROL
AND PIPING DRAWING DATED 1962
AND UPDATED 1984 PROVIDED BY
CROWN CITY PLATING COMPANY.

FIGURE 2.4

**WELL COMPLETION DIAGRAM
WATER PRODUCTION WELL**

CROWN CITY PLATING CO.
4350 TEMPLE CITY BLVD.
EL MONTE, CALIFORNIA

ENVIRONMENTAL SOLUTIONS, INC.

TOXIC INDEX

1. Corrected data from the AOC for soil matrix concentration for each toxic organic with a drinking water MCL was used.
2. The maximum data point concentration for each toxic organic in the soil matrix is weighted and assigned points according to the toxicity of the organic by its MCL. The total number of points of all toxic organics are accumulated to determine site toxicity. High site toxicity is due to high soil matrix concentrations and an indicator of mobility of a site contributing to the groundwater contamination.
3. The following toxic index was used:

CHEMICAL	MCL	TOXIC INDEX MULTIPLIER
Benzene	1 ug/l	$5/1=5$
Perchloroethylene (PCE)	5	$5/5=1$
Trichloroethylene (TCE)	5	$5/5=1$
Trichloroethane (TCA)	200	$5/200=0.025$
Dichloroethane (DCA)	5	$5/5=1$
Dichloroethene (DCE)	5	$5/5=1$
Ethyl Benzene	700	$5/700=0.007$
Xylenes	1,750	$5/1,750=0.003$
1,2 dichlorobenzene (1,2 DCB)	600	$5/600=0.008$
1,4 dichlorobenzene (1,4 DCB)	5	$5/5=1$

Based upon the above MCLs, each company's maximum toxic organic concentration would accumulate points based upon the organic's concentration as follows:

a. Benzene	5 points per 1 ug/kg concentration
b. PCE, TCE, DCA, DCE	1 point per 1 ug/kg
c. TCA	0.025 point per 1 ug/kg
d. Xylenes	0.011 point per 1 ug/kg
e. Ethyl Benzene	0.007 point per 1 ug/kg
f. 1,2 DCB	0.008 point per 1 ug/kg
g. 1,4 DCB	1 point per 1 ug/kg

Example: Toxic Index Concentration:

A company with PCE concentrations in the soil of 15 and 150 ug/kg and TCE concentrations of 10, 20, and 25 ug/kg would have $150 + 25 = 175$ points for their toxic index score.

<u>Results of Operations</u>	Fiscal year ended March 31,					5 year totals ended Mar-94	Nine months ended	
	1990	1991	1992	1993	1994		Dec-94 Actual	Sep-95 Forecast
SALES	\$26,433,733	\$25,620,181	\$22,170,213	\$24,167,467	\$24,824,270	\$123,215,864	20,180,541	14,495,000
RESALES AT COST								
Merchandise	(1,221,429)	(884,960)	(977,583)	(913,923)	(884,802)	(4,882,697)	(807,599)	(640,000)
Tooling	(1,028,464)	(1,072,691)	(453,032)	(1,023,988)	(1,084,844)	(4,663,019)	(689,859)	0
Outside Labor	(152,971)	(73,150)	(67,373)	(61,932)	(64,683)	(420,109)	(97,443)	(157,000)
Net Sales	24,030,869	23,589,380	20,672,225	22,167,624	22,789,941	113,250,039	18,585,640	13,698,000
COST OF SALES	21,608,290	21,652,457	18,630,718	19,468,170	18,832,946	100,192,581	15,413,457	11,642,000
Gross Profit	2,422,579	1,936,923	2,041,507	2,699,454	3,956,995	13,057,458	3,172,183	2,056,000
SELLING EXPENSES	967,597	851,970	772,708	686,554	683,181	3,962,010	662,346	624,000
ADMINISTRATIVE EXPENSES	1,993,708	1,886,219	1,793,701	1,798,642	2,265,947	9,738,217	1,567,428	1,854,000
Total Operating Expenses	2,961,305	2,738,189	2,566,409	2,485,196	2,949,128	13,700,227	2,229,774	2,478,000
Income (Loss) from Operations	(538,726)	(801,266)	(524,902)	214,258	1,007,867	(642,769)	942,409	(422,000)
NET OTHER INCOME (EXPENSE)	179,248	266,252	48,439	9,095	(10,366)	492,668	(65,604)	9,000
EMPLOYEE STOCK BONUS PLAN	0	0	0	0	(100,000)	(100,000)	0	0
Income (Loss) Before Taxes	(359,478)	(535,014)	(476,463)	223,353	897,501	(250,101)	876,805	(413,000)
Income Taxes	112,359	160,000	61,000	257,200	(494,000)	96,559	(335,119)	30,740
NET INCOME (LOSS)	(247,119)	(375,014)	(415,463)	480,553	403,501	(153,542)	541,686	(382,260)

In March, 1994, a contribution was made to the Employee Stock Bonus Plan.
This contribution was made to fund settlement of eligible accounts.